**THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

HUAWEI TECHNOLOGIES CO. LTD.,	
Plaintiff,	
v.	
T-MOBILE US, INC. and T-MOBILE USA, INC.,	**Civil Action No. 2:16-cv-00056-JRG-RSP**
Defendants,	**JURY TRIAL DEMANDED**
NOKIA SOLUTIONS AND NETWORKS US LLC, NOKIA SOLUTIONS AND NETWORKS OY, TELEFONAKTIEBOLAGET LM ERICSSON, and ERICSSON INC.,	
Intervenors.	

**PLAINTIFF HUAWEI TECHNOLOGIES CO. LTD.'S
REPLY CLAIM CONSTRUCTION BRIEF**

TABLE OF CONTENTS

Page

As forecasted in Huawei's Opening Brief, Defendants' responsive claim construction arguments ignore established canons of claim construction and the skill and knowledge of the ordinary artisan. By contrast, Plaintiff's proposals (1) establish that the alleged means-plus-function terms would have been well-understood; and (2) allow for the full, ordinary meaning of other claim language.

I.   '779 AND '750 PATENTS' "CONFIGURED TO" TERMS ARE NOT SUBJECT TO 112 ¶ 6

A.   The Challenged Claims Recite Sufficient Structure to a POSITA

Defendants have failed to even make a threshold showing that any of the challenged terms are subject to 112 ¶ 6, let alone that they are indefinite. There is a presumption against applying means-plus-function requirements to terms lacking the word "means," and Defendants cannot overcome that presumption here because the claims language, when read in the context of the full specification, denotes sufficient structure for the claimed functionality.

For example, the "unit" terms in the '779 Patent are similar to the "component" terms that were at issue in *E2E Processing, Inc. v. Cabela's Incorporated*, No. 2:14-cv-36, 2015 WL 4051423 (E.D. Tex. July 2, 2015) (Payne, M.J.). In *E2E*, the terms the defendant sought to establish as means-plus-function all included the word "component." *Id.* Although this Court recognized that "component" was a "nonce" word, the Court nonetheless concluded that the component terms imparted structure for two reasons. First, "the 'prefix' that appears before a purported nonce word may impart structural meaning." *Id.* at *6. Second, the Court noted that specification's teaching of the "inputs and outputs" and how the component terms "interact[] with other components . . . . inform[s] the structural character of the limitation[s]-in-question or otherwise impart[s] structure." *Id.* With this intrinsic record, Judge Payne found these sentences to impart

sufficient structure to the terms and, accordingly, found the component terms were not subject to § 112, ¶ 6. *See id.*

Those same two reasons apply here to bar Defendants' attempt to overcome the presumption against means-plus-function. First, although Defendants characterize "unit" in the '779 Patent as a nonce term, a person of ordinary skill in the art would understand the prefixes of these terms (*i.e.*, obtaining, identifying, processing) to impart structural meaning. (Wells Decl. ¶ 41 (attached as Ex. A).) Similarly, for the '750 Patent, a person of skill would understand the terms "receiver," "transmitter," and "mobility management network device" themselves to impart structural details.[1] (*Id.* ¶¶ 34-35.) For each challenged term, a POSITA would understand these words in the claims "to have a sufficiently definite meaning as the name for structure." *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015).

Second, much like the component terms in *E2E*, the terms here are described within the context of their inputs, outputs, and interactions with other units in ways that inform the character of these limitations. *See E2E*, 2015 WL 4051423 at *6. One important distinction in Huawei's favor here is that in *E2E*, the component terms' descriptions were in the specification; here, the inputs/outputs/interactions of the unit terms are in the claims themselves, thus making this record even stronger for Huawei than the record for the patent owner in *E2E*. Accordingly, these terms are not means-plus-function, and Defendants have not overcome the presumption against § 112, ¶ 6.

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[1] Defendants appear to concede that the "receiver" and "transmitter" terms connote definite structure in the **wireless** communications but contend that the **wired** space at issue in the '750 Patent is distinct. Defendants' argument is without merit, as a person of skill in the art would readily understand the terms "receiver" and "transmitter" to impart structural meaning in both the wired and wireless spaces. (*See* Ex. A ¶ 35.)

B.   Even if 112 ¶ 6 Applies, the Claims are not Indefinite

The Court need not reach the second part of the § 112 ¶ 6 inquiry if the Court agrees that, as explained above and in Huawei's opening brief, the challenged terms are not means-plus-function.   Nonetheless, if the Court proceeds to the second step of the analysis, each of the challenged terms does have sufficient structure within the '750 and '779 Patents.   For example, in the '750 Patent, what is claimed here is a "mobility management network device" comprising a receiver and transmitter in an inventive *arrangement* within the network—not any inventive mechanism inside such transmitter and receiver.   Similarly, for the '779 Patent, what is claimed is a "network element" comprising an inventive arrangement of units, not the underlying units themselves.   The focus of the invention thus is not on the inside of the claimed structures, but on what inputs and outputs they receive, send, or store, and how they interact with each other within the claimed communication device.

Accordingly, the only authority Defendants rely upon in arguing that there is insufficient structure is distinguishable. In *Selex Communications, Inc. v. Google Inc.*, the plaintiff pointed to "black box" figures in the specification as the structure for the claimed functions. No. 1:09-cv-2927-TWT, 2013 WL 1412334, at *5 (N.D. Ga. Apr. 8, 2013).   Not only were the claimed functions not readily understood functions, but also they actually went to the heart of the claimed inventions. *See id.* (discussing "capturing" and "evaluating" phone numbers in a patent directed to minimizing incurred charges by the remote origination of telephone calls).   The specification did not explain how they were to be performed, or what inputs/outputs/interactions they required. *See id.*

By contrast, here, Defendants cannot plausibly argue that the requisite circuitry or algorithm is more complex than the claimed functions themselves.   They are simple

components, and a person of ordinary skill in the art would readily know how they work within the claimed communication devices (*e.g.*, MME or SGSN). (*See* Ex. A at ¶¶ 36-38, 42.) Therefore, the '779 and '750 Patents recite sufficient structure for the terms.

C.   '750 Claim 13 Does not Violate the Single Element Rule

As explained above, Claim 13 is not a means-plus-function term and so the single element rule does not apply. However, in the event the Court determines that claim 13 is subject to 112 ¶ 6, claim 13 and its dependents are not invalid for violation of the single element rule because claim 13 recites more than one element. In the *Hyatt* case, cited by Defendants, the claim in question was a means "for incrementally generating the Fourier transformed incremental output signals in response to the incremental input signals." *In re Hyatt*, 708 F.3d 712, 714 (Fed. Cir. 1983). The Federal Circuit held that the claim only recited a single element, rejecting appellants attempt to denote "every noun" in the claim language as a separate claim element. *Id*. However, claim 13 of the '750 patent does not merely recite a single "configured to" phrase followed by a series of nouns, but rather includes *three* distinct "configured to" elements. (*See* '750 Patent at Claim 13 ("configured to: *receive* . . . configured to *include* second handover indication . . . configured to *carry* the second handover indication . . . .").)

As such, claim 13 is much more analogous to the situation in *CBT Flint Partners, LLC v. Return Path, Inc.*, 566 F. Supp. 2d 1363, 1372 (N.D. Ga. 2008) where the Court held that multiple verbs ("detect" and "compare") indicated that the recited "means" included both a means for detecting and for comparing and thus did not violate the single element rule. The other case cited by Defendants, *Enfish, LLC v. Microsoft Corp.*, is consistent with this approach. *See* 9 F.Supp 3d 1126, 1129 (C.D. Cal. 2014) (holding that the single element rule applied because "[t]here is no other verb in the claims that

corresponds to another function performed by the claimed means."). In the case of claim 13, it contains at least three separate "configured" elements, so the single element rule does not apply.

II.   THE COURT SHOULD REJECT DEFENDANTS' NARROW READ OF THE "CAPITALIZED" TERMS OF THE '779 and '750 PATENTS

Defendants' proposal that the "Create Bearer Request" and "Create Default Bearer Request" claims of the '779 and '750 patents be limited to messages with those literal titles should be rejected as this is inconsistent with how a POSITA would understand them.

Nothing in the record indicates that the inventors intended to narrow the scope of their claims based on an arbitrary message title. (*See* Opening Br. at 20-22.) Moreover, the patents use different wording to refer to the same messages ***within the same embodiment***. (*Compare* '779 Patent at Fig. 7 ("Request Bearer Create") *with* '779 Patent at 8:5-17 (describing the same message as a "Create Bearer Request" message). Defendants' approach ignores these clear teachings of the specification.

More importantly, Defendants' proposal ignores the skill and understanding that one of skill in the art would have regarding messaging in LTE systems. Specifically, an ordinary artisan would have understood that the ***actual*** messages sent from an MME to a PDN GW are not given textual titles. (Ex. A ¶¶ 27, 32.) Instead, the particular type of message is indicated by a decimal indicator. (*Id.*) For example, a "Create Bearer Reqeust" message would be indicated by the placement of a decimal value "31" in the second octet of a control plane message as shown below:

Table 6.1: Message types for GTPv2

Message Type value (Decimal)	Message	Reference	GTP-C	GTP-U
0	Reserved			
1	Echo Request		X	X
2	Echo Response		X	X
3	Version Not Supported		X	
4-30	Reserved for other protocols (currently, for S101)			
31	Create Bearer Request (currently only for default bearer activation across S11)		X	
32	Create Bearer Response (currently only for default bearer activation across S11)		X	
33	Delete Bearer Request		X	
34	Delete Bearer Response		X	
35	Update Bearer Request (currently only for default bearer activation across S11)		X	
36	Update Bearer Response (currently only for default bearer activation across S11)		X	
37	Create Forwarding Tunnel Request		X	
38	Create Forwarding Tunnel Response		X	
39-254	FFS		X	
255	User plane data (payload). G-PDU			X

(Ex. B, 3GPP TS 29.274 v. 1.0.0 (May, 2008) at 15.) Defendants' citation to the "Tracking Area Update" procedure does not compel a different conclusion and indeed confirms that a POSITA would know that particular messages are not differentiated based on their titles, but their content. As such, the particular message title is of no consequence, and is instead used in higher level standards documents to inform readers about the content of the particular message. (Ex. A ¶¶ 29, 31-32). For this reason, a POSITA would understand that a "Create Bearer Request" or a "Create Default Bearer Request" message refers to the content of the message, not its actual title as used in an LTE system.

The cases cited by Defendants do not counsel a different conclusion. For instance, the *Cassidian* case merely noted that, because capitalization was used in the claims, the Court needed to look to the specification to see what particular meaning was ascribed to the claim language. *Cassidian Commc'ns, Inc. v. MicroDATA GIS, Inc.*, No. 2:12-CV-162-JRG, 2013 WL 3187177, at *6 (E.D. Tex. June 20, 2013) (noting the capitalization and concluding that "[t]herefore, the Court finds that some clarification beyond the plain and ordinary meaning is necessary to understand this term."). A POSITA would understand from the specification that the claimed "Create Bearer Request" and "Create Default

Bearer Request" messages refer to the content of the messages – not the title (which would actually be a decimal value, not a series of English words).

III.   "ATTACH REQUEST" IN THE '750 PATENT IS NOT INDEFINITE

Defendants' indefiniteness arguments regarding the claimed "attach request" in the '750 patent fail because they simply ignore the black-letter law cited in Huawei's opening brief regarding the meaning of "includes." Specifically, Defendants mistakenly contend that the phrase "access request message includes an attach request," must be understood to refer to "an 'attach request' that exists *within* an access request message" as a separate "message, an information element, or something else." (Resp. at 18 (emphasis in original).)

It is a firmly-established canon of claim construction that "includes" in a patent claim means comprising. (*See* Opening Br. at 18 (citing cases).) Thus, the claims of the '750 patent simply require an "access request message" that comprises (or is) an "attach request," not that there be a separate access request message containing a distinct "attach request" within it. Huawei is not trying to "re-draft" the claims as Defendants contend, but merely applying the basic canons of claim construction to well-known phrases. Defendants fail to engage with the cases cited by Huawei or explain why the word "includes" should not be given its common interpretation in this case.

Specifically, in an attempt to divorce "include" from its plain meaning, Defendants point to claim 1's recitation that the "resource request message is configured to include second handover indication information." ('750 Patent at Claim 1.) However, nothing in this phrase indicated an intention by the inventors to re-define "include" to mean something other than comprising, as Defendants contend. Although it is true that later limitations in claim 1 specify additional structural relationships between the

handover indication information and resource request message (i.e., that the handover

indication information is "carried by an indication flag of the resource request

message"), nothing in this phrase suggests that the inventors are using "include" as

something besides its ordinary meaning earlier in the claim.

Further, the specification contains a detailed description of embodiments where

the "access request message" is an "attach request" message, thereby providing

reasonable certainty as to the meaning of the claims. (*See* Opening Br. at 19.) Contrary

to Defendants' argument, it is of no moment that the claims recite an "attach request"

whereas the specification uses the phrase "attach request message" as the claims are not

required to parrot the language of the specification verbatim. *See, e.g. Koito Mfg. Co.,*

Ltd. v. Turn-Key-Tech, LLC, 381 F.3d 1142, 1154–55 (Fed. Cir. 2004) (noting in the

written description context that "[t]erms need not be used *in haec verba*.").

IV.   "DETACHING" DOES NOT REQUIRE A WHOLESALE DELETION OF ALL MM CONTEXTS ASSOCIATED WITH A UE IN THE '677 PATENT

The Court should reject Defendants' unreasonably narrow construction of

"detach" and "detaching" in the '677 patent as requiring a complete deletion of all MM

contexts, because Defendants have failed to identify any rationale in the intrinsic or

extrinsic record for such a drastic constriction of the claims. Instead, Defendants rely

on the conclusory and unsupported statements of their expert and point to extrinsic

evidence that has little to do with the claimed technology.

As a preliminary matter, nothing in the portions of the specification cited by

Defendants supports Defendants' narrowing of the claims. Defendants brief cites to the

many instances where the '677 Patent references deleting "the MM context," but nothing

about this phrase suggests that each and every MM context must be deleted, or suggests

that a POSITA would not consider deleting a field of MM context information to be

deleting "the MM context." (*See* Ex. A ¶¶ 54-55.) Furthermore, though the phrase "an"

MM context only appears once in the patent, it appears in the description of one of the

preferred embodiments, and is not just a throwaway usage. (*See* '677 Patent at 13:25-

32.) Moreover, even if Defendants allegation that an "MM Context" refers to the entire

table of context information were correct (which it is not), the specification never states

that the "entire" or "whole" or "all of" the MM context must be deleted. The

specification simply never describes the invention in this narrow manner and it would

be an error to read such a limitation into the claims.

Defendants' allegations that the benefits of the invention are only realized by

deleting the entire table of MM context information is similarly incorrect. The stated

goal of the '677 patent is "to save network resources" and a person of ordinary skill in

the art would have understood that network resources are saved so long as at least some

information is deleted from the MME. (Ex. A ¶ 56.) Specifically, the problem in the art

at the time of the '677 patent was that the MME did not delete ***any*** context information,

and this drawback is overcome when even a subset of resources are deleted.

In addition to the intrinsic record, the extrinsic evidence relied on by Defendants

fails to support Defendants' proposed construction as it is largely unrelated to the

claimed technology.[2] Specifically, Defendant's expert points to an entirely different

chapter of the 3GPP standard (32.251) as purportedly demonstrating that there "can

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[2] Defendants allege that "extrinsic evidence that post-dates the 677 Patent is improper," but
Defendants are incorrect. As set forth in the MPEP: "References which do not qualify as prior
art because they postdate the claimed invention may be relied upon to show the level of ordinary
skill in the art at or around the time the invention was made." Manual of Patent Examining
Procedure § 2141.03 (citing to *Ex parte Elrich*, 22 USPQ 1463 (Bd. Pat. App. & Inter. 1992)).
Defendants have not contested that the information cited in Huawei's extrinsic evidence would
be within the knowledge of a POSITA at the time of the invention.

only be one MM context per UE/MS at a time." (*See* Resp. Ex. A ¶ 62.) However, this section of the 3GPP standard discusses the "charging information" that is collected by an SGSN (a *3G* network component) and it nowhere states that an MME (the *LTE* network component recited in the '677 patent) can only have one MM context per UE at a time. (*See* Resp. Ex. G at 7.) Similarly, Defendants cite to context information stored in other network components (*see* Resp. at 29), but does not show that the "MM context" of the '677 Patent must refer to every field in the "MM and EPS bearer contexts" table.

V.   THE PREAMBLE OF THE '677 PATENT IS NOT LIMITING

The preamble of the '677 Patent is not a limitation on the claims because it does not recite essential steps, structure, or affect the remaining claim language. *See Cell and Network Selection LLC v. AT&T Inc.*, Case No. 6:13-cv-403, 2014 WL 3671029, at *12 (E.D. Tex. Jul. 23, 2014). The body of the claims already includes a requirement that detaching take place during a handover – the MME receive a delete bearer request "*indicat[ing that] the UE handovers from the 3GPP network to the non-3GPP network*" and afterwards that the MME detaches the UE "*from the 3GPP network*." ('677 Patent at Claim 1.) Furthermore, the fact that certain terms have an antecedent basis in the preamble does not mean the preamble must be limiting, particularly as here where the claims already provide a structurally complete invention. *See Unwired Planet LLC v. Google Inc.*, 2015 WL 3378476, *6 (D. Nev. 2015).

Dated: February 16, 2017   Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above and foregoing document has

been served on February 16, 2017 to all counsel of record who are deemed to have consented to

electronic service via the Court's CM/ECF system per Local Rule CV-5(a)(3).

/s/ David Barkan
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